SPEC® CFP2006 Result

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Supermicro

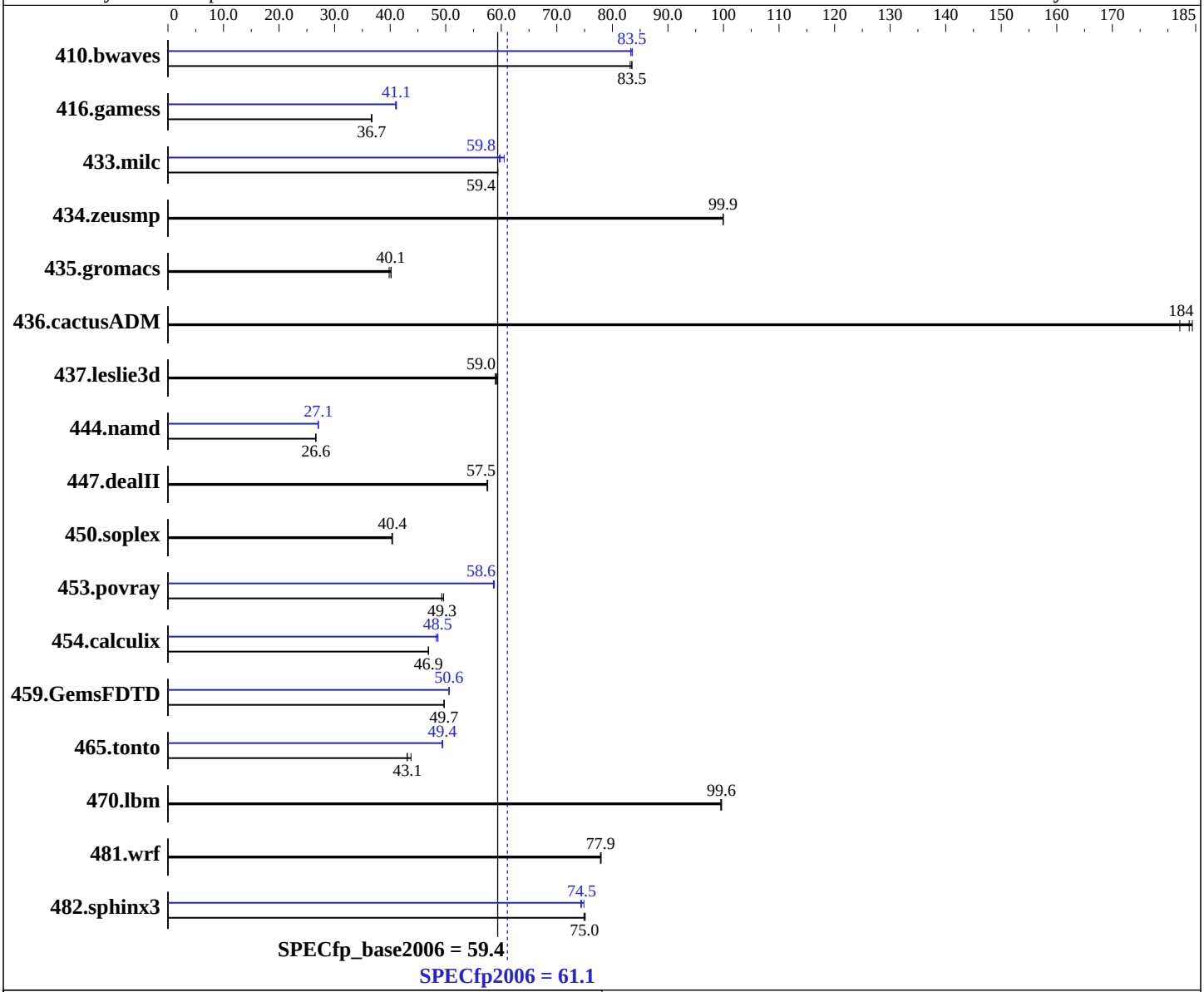
Supermicro C7Q67 motherboard (Intel Core i7-2700K, 3.50 GHz)

SPECfp®2006 = 61.1

SPECfp_base2006 = 59.4

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: May-2012
Hardware Availability: Oct-2011
Software Availability: Dec-2011



Hardware

CPU Name:	Intel Core i7-2700K
CPU Characteristics:	Intel Turbo Boost Technology up to 3.90 GHz
CPU MHz:	3500
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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Software

Operating System:	Red Hat Enterprise Linux Server Release 6.2, Kernel 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4
System State:	Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 2Rx8 PC3-12800E-11, ECC)
Disk Subsystem: 1 x 600 GB SATA II, 7200 RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**163**	**83.5**	163	83.2	163	83.5	163	83.6	**163**	**83.5**	163	83.3
416.gamess	535	36.6	533	36.7	**534**	**36.7**	478	41.0	**476**	**41.1**	476	41.1
433.milc	155	59.3	**155**	**59.4**	155	59.4	152	60.5	154	59.7	**153**	**59.8**
434.zeusmp	91.0	99.9	91.1	99.9	**91.1**	**99.9**	91.0	99.9	91.1	99.9	**91.1**	**99.9**
435.gromacs	**178**	**40.1**	178	40.2	179	39.8	**178**	**40.1**	178	40.2	179	39.8
436.cactusADM	64.8	184	**65.0**	**184**	65.6	182	64.8	184	**65.0**	**184**	65.6	182
437.leslie3d	**159**	**59.0**	160	58.9	159	59.2	**159**	**59.0**	160	58.9	159	59.2
444.namd	301	26.6	**301**	**26.6**	301	26.6	296	27.1	297	27.0	**296**	**27.1**
447.dealII	199	57.5	199	57.6	**199**	**57.5**	199	57.5	199	57.6	**199**	**57.5**
450.soplex	206	40.4	**206**	**40.4**	207	40.3	206	40.4	**206**	**40.4**	207	40.3
453.povray	107	49.6	108	49.3	**108**	**49.3**	**90.8**	**58.6**	90.8	58.6	90.5	58.8
454.calculix	176	46.9	**176**	**46.9**	176	46.9	170	48.6	**170**	**48.5**	171	48.3
459.GemsFDTD	214	49.7	**214**	**49.7**	213	49.7	**210**	**50.6**	210	50.6	210	50.6
465.tonto	229	43.1	**228**	**43.1**	225	43.7	199	49.4	**199**	**49.4**	199	49.5
470.lbm	138	99.6	**138**	**99.6**	138	99.5	138	99.6	**138**	**99.6**	138	99.5
481.wrf	143	77.9	143	78.0	**143**	**77.9**	143	77.9	143	78.0	**143**	**77.9**
482.sphinx3	260	74.9	259	75.1	**260**	**75.0**	260	74.9	**262**	**74.5**	262	74.3

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

Platform Notes

```
As tested, the system used a Supermicro CSE-731i-300B chassis.
The chassis is configured with a PWS-303-PQ power supply, 1 SNK-P0046A4 heatsink,
as well as 1 FAN-0108L4 rear cooling fan and 1 FAN-0113L4 front intake fan.
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"
OMP_NUM_THREADS = "4"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
```

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

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Base Optimization Flags (Continued)

C++ benchmarks:
`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch -ansi-alias`

Peak Compiler Invocation

C benchmarks:
`icc -m64`

C++ benchmarks:
`icpc -m64`

Fortran benchmarks:
`ifort -m64`

Benchmarks using both Fortran and C:
`icc -m64 ifort -m64`

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: `-xAVX`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-prof-use`(pass 2) `-static -auto-ilp32 -ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel -static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml

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